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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,091	06/27/2001	Ravindra K. Shetty	H00-02099 (256.101US1)	4434

128 7590 10/07/2005

HONEYWELL INTERNATIONAL INC.
101 COLUMBIA ROAD
P O BOX 2245
MORRISTOWN, NJ 07962-2245

EXAMINER	
CHOI, PETER H	

ART UNIT	PAPER NUMBER
3623	

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

T-D

Office Action Summary	Application No.	Applicant(s)	
	09/893,091	SHETTY ET AL.	
	Examiner	Art Unit	
	Peter Choi	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/15/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

4/

DETAILED ACTION

1. Claims 1-60 are pending in the application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-3, 11-21, and 31-60 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

From the equation provided on page 14 of the specification for the graceful decrement,

$$\delta t_i = \frac{(\Delta T) * (\text{profit probability})}{(\text{current number of products}) - 1}$$

the units involved are ΔT (days), profit probability (no unit), current number of products (no unit).

The resulting unit analysis provides (days * a number)/(a number) = days.

The graceful decrement is supposed yield a reduced number of products; however, using the formula provided, determines a reduced number of days (resulting from one less product). For the purposes of the following art rejection, the Examiner has interpreted each citation of the graceful decrement to be a reference to the change in production time resulting from reducing the number of products involved in a product request order (i.e., instead of products X and Y being produced, only product X is produced).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 10 recites the limitation "the predetermined margin" in line 1. There is insufficient antecedent basis for this limitation in the claim. A predetermined margin is not cited in claims 4 or 6 (the parent claims of claim 10), thus the term lacks antecedent

basis. However, it is noted that the limitation is cited in claim 8. For the purposes of the following art rejection, the Examiner has assumed that claim 10 is dependent on claim 8.

7. Claim 11 recites the limitation "the unit time of manufacture " in limitation (b)(7). There is insufficient antecedent basis for this limitation in the claim. A predetermined margin is not cited in claim 4 (the parent claim of claim 11), thus the term lacks antecedent basis. For the purposes of the following art rejection, the Examiner has assumed that "the unit time of manufacture" is a reference to the time required to manufacture a single unit of a product.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-3, 5-8, 10, 16-17, 19-21, 23-26, 28, 30-32, 34-35, 37-41, 43-44, 46-49, 52-56, and 59-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al. (U.S Patent #6,055,519).

As per claims 1 and 19, a computerized **(computer implemented)** method for production management comprising:

determining a reduced quantity of a requested product quantity in a customer order **(figure out whether filing that request is possible or whether an alternate plan is possible {such as delivering fewer items})** in reference to the probability of profit **(invention can be used in sales environments for the purpose of optimizing the profits of the seller)** of the product [Column 6, lines 26-33]; and

communicating the reduced quantity **(seller proposes to the buyer a promise to ship items at a certain quantity and date, the buyer thinks about the promise and either reissues an altered request or accepts the promise)** [Column 6, lines 37-42].

Although Kenendy et al. does not explicitly teach the step of communicating the reduced quantity to a production management process, it is inherent that once an agreement has been made regarding a customer order (product mix and quantity), said order would be communicated to production and manufacturing facilities to begin processing of the customer order.

Kennedy et al. does not teach the step of determining the reduced quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller. In addition, Official Notice is taken that it is old and well known in the manufacturing arts, that, when possible, manufacturers will

identify the most profitable product in a set (usually by comparing the profit margins of each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the profitability of products into consideration when determining the reduced quantity, because the resulting invention would result in an instant analysis of potential increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

As per claims 2 and 20, the computerized method of claim 1, wherein the determining further comprises:

iteratively determining a graceful reduction of the requested product quantity from a time shortfall **(figure out whether filing that request is possible {due to a time shortfall} or whether an alternate plan is possible {such as delivering fewer items})**, from the profit probability **(invention can be used in sales environments for the purpose of optimizing the profits of the seller)**, and from a reduced number of plurality of products **(figure out whether an alternate plan is possible {such as delivering fewer items})**, until the customer accepts the reduced quantity or until the time shortfall is non-existent **(seller proposes to the buyer a promise to ship items at a certain quantity and date, the buyer thinks about the promise and either**

reissues an altered request to which the seller must generate a new promise, or the buyer or accepts the promise {which completes the negotiation [the negotiation process therefore being an iterative process]}) [Column 6, lines 26-42]

Kennedy et al. does not teach the step of determining the reduced quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller. In addition, Official Notice is taken that it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the profitability of products into consideration when determining the reduced quantity, because the resulting invention would result in an instant analysis of potential increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

As per claims 3 and 21, Kennedy et al. teaches the computerized method of claim 1, the method further comprising:

determining that the requested product quantity can not be satisfied **(whether fulfillment of a customer request is possible)** within a customer target time period **(customer request data regarding relevant items, quantities, and dates are stored)** [Column 3, line 64-67, Column 6, lines 30-31].

As per claims 5 and 23, Kennedy et al. teaches the computerized method of claim 4, the method further comprising:

(c) communicating the quantity of each of the plurality of products corresponding to a maximum vendor profit of the requests for a plurality of products.

Although Kennedy et al. does not explicitly teach the step of communicating the quantity of requested products, it is inherent that once an agreement has been made regarding a customer order (product mix and quantity), said order would be communicated to production and manufacturing facilities to begin processing of the customer order.

As per claims 6, 16, 24 and 34, Kennedy et al. teaches the computerized method of claim 4, wherein the determining (a) further comprises:

(a)(2) obtaining customer order data, the data further comprising an identification of each of the plurality of products, a requested quantity of each of the plurality of products, and an associated target time of each of the plurality of requested products **(data such as relevant items, quantities and dates)** [Column 3, lines 65-67]; and

(a)(5) deter mining that at least one request for a plurality of products exceeds a production capacity of a vendor **(figure out whether fulfilling customer request is possible)**, from the effective quantity of the at least one of the plurality of products, from the requested quantity of the at least one of the plurality of products **(customer order requests)**, and from the target time of the at least one of the plurality of products **(customer order date)** [Column 3, lines 65-67, Column 6, lines 30-32].

Regarding (a)(1) obtaining process and inventory operation data, the data further comprising an inventory quantity for each of the plurality of products;

(a)(3) deter mining an effective quantity for each of the plurality of products to be produced from the requested quantity of each of the plurality of products and from the inventory quantity for each of the plurality of products; and

(a)(4) deter mining an actual time to produce all of the plurality of products to be produced, from the effective quantity for each of the plurality of products to be produced

Official Notice is taken that it is old and well known in the manufacturing arts that manufacturers are able to assess inventory levels and production capacity (and performance). From this information, manufacturers can inherently determine the quantity of products to be produced (the difference between requested quantity and available quantity) and the time required to produce said quantity of products.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to include the step of obtaining process and inventory operation data, because the resulting invention would enable manufacturers to assess the feasibility of fulfilling customer orders facilitating the need to negotiate a modified customer order such that the terms (date, products, and requested quantity) can be fulfilled.

As per claims 7 and 25, Kennedy et al. does not explicitly teach the computerized method of claim 6, wherein the obtaining (a)(1) action is performed after the obtaining (a)(2) action. However, it is inherent in the manufacturing arts that customer order requests (product plurality and quantity) must be received before being compared with existing inventory and production capacities in determining the likelihood of fulfillment.

As per claim 81 26, and 41, Kennedy et al. teaches the computerized method of claim 6, wherein the determining (a)(5) further comprises:

(a)(5)(i) determining that at least one request for a plurality of products exceeds a production capacity of a vendor **(figure out whether filling that request is possible {due to a time-shortfall or insufficient production capabilities})** beyond a predetermined margin [Column 6, lines 26-42].

As per claims 10, 17, 28, and 35, Kennedy et al. does not explicitly teach the computerized method of claim ~~6~~ 8, wherein the predetermined margin further comprises a predetermined absolute quantity margin.

However, it is inherent that manufacturers lack infinite production capacity and therefore have an absolute quantity predetermined by the number of available production facilities and limited resources.

As per claims 12 and 30, Kennedy et al. does not explicitly teach the computerized method of claim 11, wherein determining (b)(4), further comprises:

(b)(4)(i) diving the profit of a production of one of the plurality of products in the customer order into the profit of all of the plurality of products in the customer order, yielding a portion of total profit attributable to the one product; and

(b)(4)(ii) determining a profit probability from the portion of total profit attributable to the one product subtracted from (b)(4)(i).

It is inherent that the percentage of profits from a particular product in an order can be determined by dividing the profit of one product into the profit of all products. It is also inherent that the combined percentage of profitability of all products in an order must add to 100%, thus in an order comprising 2 products, the percentage profit of the second product is equal to 100% minus the percentage profit of the first product.

As per claims 13, 31, 37, and 43, Kennedy et al. teaches a computerized method for production management comprising:

(a) determining that at least one request for a plurality of products exceeds a production capacity of a vendor **(figure out whether filling that request is possible {due to a time-shortfall or insufficient production capabilities})** wherein the request for a plurality of products includes a quantity associated with each of the plurality of products **(data representing relevant items, quantities, and dates of product requests)** from process and inventory operation data [Column 3, lines 65-67, Column 6, lines 26-42]

(c) determining a graceful decrement from the time shortfall **(the buyer considers the promise and either reissues an altered request, with lower quantities)**, from the inverse profit probability, and from a decremented number of plurality of products **(an alternate plan, such as delivering fewer items {reducing the number of products requested})**;

(d) updating the objective value from the graceful decrement [see the analysis of claim (b)(6) above]

(e) determining the actual quantity to be produced for each of the plurality of products, from the graceful decrement [see the analysis of claim (b)(7) above]; and

(f) determining an actual time to produce all of the plurality of products to be produced, from the actual quantity to be produced for each of the plurality of products [see the analysis of claim (b)(8) above].

As per (b) determining an inverse profit probability from the profit of a production of one of the plurality of products in the request, and from the profit of all of the plurality of products in the customer order:

It is inherent that the percentage of profits from a particular product in an order can be determined by dividing the profit of one product into the profit of all products. It is also inherent that the combined percentage of profitability of all products in an order must add to 100%, thus in an order comprising 2 products, the percentage profit of the second product is equal to 100% minus the percentage profit of the first product.

As per claims 14, 32, 38, and 44 Kennedy et al. teaches the computerized method of claim 13, wherein the determining (a) further comprises:

(a)(1) deter mining that at least one request for a plurality of products exceeds a production capacity of a vendor **(figure out whether filling that request is possible {due to a time-shortfall or insufficient production capabilities})** beyond a predetermined margin, from the requested quantity of the at least one of the plurality of products, and from the target time of the at least one of the plurality of products **(data such as relevant items, quantities, and dates)** [Column 3, lines 65-67, Column 6, lines 26-42].

As per claim 39, Kennedy et al. teaches a computer-readable medium having stored thereon a data structure representing a reduced quantity of a requested product quantity produced by a method comprising:

determining that the quantity of the requested product can not be satisfied by a vendor **(figure out whether filling that request is possible {due to a time-shortfall or insufficient production capabilities})** within a customer target time period [Column 6, lines 26-42]; and

iteratively determining a graceful reduction of the requested product quantity from a time shortfall, from the inverse profit probability, and from a reduced number of plurality of products, until the customer accepts the reduced quantity or until the time shortfall is non-existent [see analysis of claim 2 above].

As per claim 40, Kennedy et al. teaches the computer-readable medium of claim 39, produced by the method further comprising:

communicating the reduced quantity to a vendor production process [see analysis of claim 1 above].

As per claim 46, Kennedy et al. teaches a system for transacting in electronic commerce comprising:

a processor; and

software means operative on the processor for degrading the quantity of an order of a plurality of products using an inverse probability of profit function in reference to profits from each of the products in the order.

Kennedy et al. teaches a computer implemented system and process for negotiating the sale of goods, inherently requiring the use of a processor (computer) with software means for degrading the quantity of an order (negotiating a customer order to alter requested products and quantity) [abstract].

As per claims 47 and 54, Kennedy et al. teaches a computerized apparatus for production management comprising:

a demand analyzer, that determines if a vendor can satisfy a quantity of customer demand for a product **(decision process used to figure out whether fulfillment of a customer request is possible)**, from a database of process and inventory operation data and from a database of customer order data [Column 6, lines 30-32]; and

a graceful quantity degrader, operably coupled to the demand analyzer **{operating on the same computer or computer network}**, that yields a degraded quantity from the quantity of customer demand **(reissues an altered request, with lower quantities)** [Column 6, lines 26-42].

Kennedy et al. does not teach the step of determining the reduced quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller. In addition, Official Notice is taken that it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of

each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the profitability of products into consideration when determining the reduced quantity, because the resulting invention would result in an instant analysis of potential increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

As per claims 48 and 55, Kennedy et al. fails to explicitly teach the computerized apparatus of claim 47, wherein the graceful quantity degrader yields the degraded quantity for each of the products that the customer indicated a reduced quantity thereof, from a time shortfall **(inability to fulfill customer request {due to a time-shortfall or insufficient production capabilities})**, the inverse probability of profit, and from a decremented number of plurality of products **{effective quantity agreed upon after negotiation}** of the customer order.

It is inherent that the degraded quantity can be computed by taking the difference between the initially requested quantity, and the final agreed-upon quantity.

Kennedy et al. does not teach the step of determining the degraded quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller. In addition, Official Notice is taken that it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the profitability of products into consideration when determining the reduced quantity, because the resulting invention would result in an instant analysis of potential increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

As per claims 49 and 56, Kennedy et al. teaches a computerized apparatus for production management comprising:

an excess quantity determiner **(decision process)**, that determines that one or more customer requests for a plurality of products, exceed a production capacity of the vendor **(filling customer request is possible {or not possible})** within a prescribed time period **{date associated with customer order}** [Column 3, lines 65-67, Column 6, lines 26-42]; and

a reduced quantity degrader, operably coupled to the excess quantity determiner **{operating on the same computer or computer network}**, that yields a reduced quantity **(reissues an altered request, with lower quantities)** [Column 6, lines 26-42].

Kennedy et al. does not teach the step of determining the reduced quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller. In addition, Official Notice is taken that it is old and well known in the manufacturing arts, that, when possible, manufacturers will seek to substitute requested products with similar products with higher profit margins. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the profitability of products into consideration when determining the reduced quantity, because the resulting invention would result in increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

As per claims 52 and 59, Kennedy et al. teaches a computerized apparatus for production management comprising:

an excess quantity determiner **(decision process)**, that determines that one or more customer requests for a plurality of products exceed a production capacity of the vendor **(filling customer request is possible {or not possible})** within a prescribed

time period **{date associated with customer order}** [Column 3, lines 65-67, Column 6, lines 26-42]; and

a reduced quantity determiner, operably coupled to the excess quantity determiner **{operating on the same computer or computer network}**, that yields a reduced quantity **(reissues an altered request, with lower quantities)** [Column 6, lines 26-42], from an inverse probability of profit of the reduced quantity, wherein the reduced quantity determine further comprises:

a gracefully-decremented quantity determiner, yielding a reduced quantity, operably coupled to the inverse profit probability determiner, wherein the gracefully-decremented quantity is determined for each of the products that the customer indicated a reduced quantity, and determined from a time shortfall, the inverse probability of profit, and from a decremented number of plurality of products [see analysis of claim 11(b)(5) above].

As per claims 53 and 60, Kennedy et al. does not explicitly teaches the computerized apparatus of claim 52, wherein the inverse profit probability is determined from a projected profit of a product in the customer request, and from the profit of the entire customer request.

However, it is inherent that only products in the customer request impact its profitability; in other words, products not in the product order have 0% probability of profit.

10. Claim 4, 9, 11, 15, 18, 22, 27, 29, 33, 36, 42, 45, 50, 51, 57, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al. (U.S Patent #6,055,519) as applied to claims 13, 31, 39, 43, 49, and 56 above, and further in view of Eder (U.S Patent #5,615,109).

As per claims 4 and 22, Kennedy et al. teaches a computerized method for production management comprising:

(a) determining that at least one request for a plurality of products exceeds a production capacity of a vendor **(whether fulfillment of a customer request is possible)**, wherein the request for a plurality of products includes a quantity associated with each of the plurality of products from process and inventory operation data and from customer order data **(customer request data regarding relevant items, quantities, and dates are stored)** [Column 3, line 64-67, Column 6, lines 30-31]; and

As per (b) determining a quantity of each of the plurality of products corresponding to a vendor maximum profit of the requests for a plurality of products, from a degradation of the quantity associated with at least one of the plurality of products:

Eder teaches a profit maximized requisition set created by utilizing multi-objective {maximizing profit, matches production capacity} linear programming techniques [abstract].

Kennedy et al. teaches a system of determining an order promise (products and quantities) for fulfilling customer orders used to optimize profits of the seller. Eder teaches a system of generating feasible, profit maximizing requisition sets directed to the analogous art of inventory management; thus, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Kennedy et al. and Eder because the combination would result in a system yielding a feasible and maximally profitable product mix that the manufacturer could propose to the buyer, hastening the process of determining a modified customer order, while maximizing profits and ensuring order fulfillment.

As per claims 9, 15, 27, and 33, Kennedy et al. does not explicitly teach the computerized method of claim 6, wherein the determining (a)(5) further comprises:

(a)(5)(i) determining a batch objective value for producing and delivering each of the plurality of products, from the effective quantity of the at least one of the plurality of products, from the requested quantity of the at least one of the plurality of products;

(a)(5)(ii) determining the total production time of the plurality of products from the batch objective value of each of the plurality of products; and

(a)(5)(iii) comparing the target time to the total production time of the plurality of products.

Eder teaches the generation of feasible, profit maximized requisition sets created by utilizing multi-objective {maximizing profit, matches production capacity} linear programming techniques [abstract].

It is inherent in the manufacturing arts that profit (batch objective value) can be determined from the production batch size (effective quantity). It is further inherent in the manufacturing arts that the determination of production time is dependent on the quantity of products and production capacities. As the teachings of Eder generate feasible requisition sets, it is inherent that the required production time is compared to the target time, and that all solutions enable fulfillment of the customer order prior to the target time.

Kennedy et al. teaches a system of determining an order promise (products and quantities) for fulfilling customer orders used to optimize profits of the seller. Eder teaches a system of generating feasible, profit maximizing requisition sets directed to the analogous art of inventory management; thus, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Kennedy et al. and Eder because the combination would result in a system yielding a feasible and maximally profitable product mix that the manufacturer could propose to the buyer, hastening the process of determining a modified customer order, while maximizing profits and ensuring order fulfillment.

As per claims 11, 18, 29, 36, 42 and 45, Kennedy et al. teaches the computerized method of claim 4, wherein determining (b) for each product in the order, further comprises:

(b)(1) deter mining a time shortfall in the production of each of the plurality of products from actual time to produce all of the plurality of products to be produced **(figure out whether fulfilling customer request is possible {given requested products, quantities and date})**, and from the target time [Column 6, lines 26-38];

(b)(2) com municating to the customer each of the time shortfalls **{the seller submits a modified proposal generated due to an inability to fulfill the initial request}** [Column 6, lines 26-38];

(b)(3) receiving from t he customer information representing reduction in the quantity associated with at least one of the plurality of products **(reissued customer request)** [Column 6, lines 39-40];

(b)(5) determining a graceful decrement from the time shortfall, from the profit probability, and from a decremented number of plurality of products [see analysis of claim 2 above];

As per (b)(4) determining a profit probability from the profit of a production of one of the plurality of products in the customer order, and from the profit of all of the plurality of products in the customer order:

It is inherent in the manufacturing arts that the profitability of a particular product (in comparison to other products comprising an order) can be determined (an analysis of production costs and sale price).

As per (b)(6) updating the objective value from the graceful decrement;

(b)(7) deter mining the actual quantity to be produced for each of the plurality of products, from the graceful decrement, and from the unit time of manufacture; and

(b)(8) deter mining an actual time to produce all of the plurality of products to be produced, from the actual quantity to be produced for each of the plurality of products:

Eder teaches the generation of feasible, profit maximized requisition sets created by utilizing multi-objective {maximizing profit, matches production capacity} linear programming techniques [abstract].

It is inherent that in the generation of an optimal solution set, each incremented (or decremented) quantity of a product requires an updating of the objective value (maximizing vendor profit, minimizing vendor costs, etc.). It is further inherent that the optimal solution set quantifies the actual production quantity for each of the plurality of products, and that the time required to produce the actual production quantity can be determined as a function of comparing production requirements with production capabilities.

Kennedy et al. teaches a system of determining an order promise (products and quantities) for fulfilling customer orders used to optimize profits of the seller. Eder teaches a system of generating feasible, profit maximizing requisition sets directed to the analogous art of inventory management; thus, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Kennedy et al. and Eder because the combination would result in a system yielding a feasible and maximally profitable product mix that the manufacturer could propose to the buyer, hastening the process of determining a modified customer order, while maximizing profits and ensuring order fulfillment.

As per claims 50 and 57, Kennedy et al. teaches the computerized apparatus of claim 49, wherein the excess quantity determiner further comprises:

a determiner of production time shortfall **(figure out whether fulfilling customer request is possible {given requested products, quantities and date})**, from the actual total production time, and a target production time **{customer order data}**, wherein the production shortfall indicates an excess quantity [Column 3, lines 65-67, Column 6, lines 26-42].

Although not explicitly taught by Kennedy et al., Eder teaches a determiner of batch objective values, from an effective quantity of at least one product identified in the request, and from the corresponding production speed of each of a plurality of product

batches in the request; and a determiner of actual total production time of the at least one products in the request, from the sum of the batch objective values.

It is inherent that in the generation of an optimal solution set using linear programming techniques, each incremented (or decremented) quantity of a product requires an updating of the objective value (maximizing vendor profit, minimizing vendor costs, etc.). It is further inherent that the optimal solution set quantifies the actual production quantity for each of the plurality of products, and that the time required to produce the actual production quantity can be determined as a function of comparing production requirements with production capabilities.

Kennedy et al. teaches a system of determining an order promise (products and quantities) for fulfilling customer orders used to optimize profits of the seller. Eder teaches a system of generating feasible, profit maximizing requisition sets directed to the analogous art of inventory management; thus, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Kennedy et al. and Eder because the combination would result in a system yielding a feasible and maximally profitable product mix that the manufacturer could propose to the buyer, hastening the process of determining a modified customer order, while maximizing profits and ensuring order fulfillment.

As per claims 51 and 58, Kennedy et al. teaches the computerized apparatus of claim 49, wherein the reduced quantity determiner further comprises:

a gracefully-decremented quantity determiner, operably coupled to the inverse profit probability determiner, wherein the gracefully-decremented quantity is determined for each of the products that the customer indicated a reduced quantity, and determined from a time shortfall, the inverse profit probability, and from a decremented number of plurality of products [see analysis of claim 11(b)(5) above];

Kennedy et al. does not explicitly teaches the step of determining an inverse profit probability, wherein the inverse profit probability is determined from a projected profit of a product in the customer request, and from the profit of the entire customer request.

However, it is inherent that only products in the customer request impact its profitability; in other words, products not in the product order have 0% probability of profit.

Although not explicitly taught by Kennedy et al., Eder teaches an objective-value determiner **(linear programming techniques)**, operably coupled to the gracefully-decremented quantity determiner, wherein the objective-value is determined for each product in the customer order **{dependent on the objective value; for instance, if the objective value is to maximize profit, the object value for each product is**

equivalent to the unit profit margin} from the gracefully-decremented quantity, and from the previous objective value **{measured as the change in objective value from increasing/decreasing quantity of a particular product}** [abstract];

an actual-quantity determiner **(linear programming techniques)**, operably coupled to the objective-value determiner **{located on the same computer, or network of computers}**, wherein the actual-quantity is determined from the objective value **{the optimal solution generated by the linear programming techniques yields a product quantity associated with the maximum objective value}**, a production speed of the product, and from the inventory quantity of the product **{constraints taken into consideration in linear programming techniques}**; and

a total-production-time determiner **(linear programming techniques)**, operably coupled to the actual-quantity determiner **{located on the same computer, or network of computers}**, wherein the total-production-time is determined as the sum of objective value of each product **{the production time required for a single unit of every product is known; the linear programming techniques determines the quantity of products required; thus, the total production time is the product of the quantity of products with the production time per unit. Alternatively, the objective function may be to minimize production time; in this case, the objective value of each product is the production time per unit}**.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dalal (U.S Patent #6,895,384) teaches a method and system for optimizing request-promise workflows.

Rubin et al. (U.S Patent #6,078,897) teaches a method for optimizing orders for goods or services to increase a discount. An order calculator determines the least expensive group of products by taking into consideration every product by the vendor.

Milne et al. (U.S Patent #5,943,484) teaches a computer implemented decision support tool serving as an advanced material requirements planning solver that generates a match between existing assets and demands.

Crampton et al. (U.S Patent #6,415,196) teaches a manufacturing scheduling process with scheduling and editing capabilities for solving finite capacity planning problems.

Jenkins et al. (USPGPub 2002/0188499) teaches a system and method for ensuring order fulfillment.

Dangat et al. (U.S Patent #5,971,585) teaches a best can do matching of assets with demand within a particular time frame.

Peachey-Kountz et al. (U.S Patent #6,463,345) teaches a regenerative available to promise system. Each enterprise's assets (output or supply) is matched to customer orders, and a supply line is optimized based on an order commit date, taking into consideration available capacity and shipping time requirements.

Kennedy et al. (U.S Patent #6,167,380) teaches a system and method for allocating manufactured products to sellers.

Peachey-Kountz et al. (USPGPub 2004/0068430) teaches a single level bill of material available to promise.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Choi whose telephone number is (571) 272 6971. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Peter Choi
Examiner
Art Unit 3623

PC

September 30, 2005

TARIQ R. HAFIZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600